

REMARKS

Amendment To The Claims

The claims have been amended to more clearly and succinctly recite the present invention. The amendment to claim 14 "wherein each of said pre-selected patterns on said surface is distinct" is supported in the disclosure on page 5, lines 4 to 6 of the originally filed application.

Patentability of the Claims Over the Cited References

In the action dated February 25, 2004, claims 14, 15, 17-24, 26, 29, and 31-33 were rejected under 35 U.S.C. § 102(b) as being anticipated by the reference United States Patent No. 6,060,256 issued to Everhart et al. (the Everhart '256) and claims 14, 15, 30, 31 and 32 were rejected under 35 U.S.C. § 102(b) as being anticipated by the reference United States Patent No. 5,512,131 issued to Kumar et al. (the Kumar '131 patent).

In the Advisory Action dated May 19, 2004, the Examiner asserted that the previous amendment does not place the application in condition for allowance over the Everhart '256 patent because the claims do not require that the pre-selected patterns to be different, merely that they give rise to diffraction patterns distinct from the other diffraction patterns. The Examiner has also asserted that there is no limitation dealing with how the distinct patterns would be generated (ie such as the binding of the target ligand to the receptor). Claim 14 as presently amended recites:

"providing a substrate including a surface and on said surface a first pre-selected pattern of first analyte-specific receptors and at least a second pre-selected pattern including second analyte-specific receptors, wherein each of said pre-selected patterns on said surface is distinct and gives rise to a pre-

selected diffraction pattern distinct from any other diffraction pattern when the analyte-specific receptor which forms said pre-selected pattern is bound to the appropriate analyte;

Therefore, Applicants respectfully submit claim 14 as presently amended patentably distinguishes over the Everhart '256 patent. Similarly the Kumar '131 patent does not disclose these features. The Examiner also asserted in the Advisory Action, last sentence, that:

"It should be emphasized that the limitations that applicant's have recited would include detecting just one diffraction patterns that is associated with just one analyte binding to an associated pre-selected pattern."

Claim 14 is directed to a method of measuring "at least two analytes" as recited in the preamble. The amendment to the second paragraph of claim 14 is to be consistent with this, where it is recited:

"and identifying from the image of diffracted light the presence or absence of said analytes in said medium.

Therefore, with respect to claim 14, Applicants assert the Everhart '256 patent does not teach simultaneously detecting for the presence of at least two analytes in a medium by providing *at least two different patterns of analyte-specific receptors* which give different diffraction patterns from each other. Similarly, Kumar does not teach simultaneously detecting for the presence of at least two analytes using the method recited in claim 14.

Support for new dependent claim 67 for the at least two patterns interpenetrating one another can be found on page 8, lines 29-3, of the application as filed.

The incorporation into new claim 68 of substrate compositions finds support in the originally filed claim 30, which is as follows:

30. The method according to claim 14 wherein said substrate is selected from the group consisting of glass, mica, polished silicon, silicon dioxide, polymeric materials, substantially transparent polymeric materials, partially or fully reflective substrates including metals, and metal coated substrates.

Support for dependent claim 69 for polystyrene as the substrate material can be found on page 20, line 9, of the application as filed.

In the Final Office Action of February 25, 2004, the Examiner asserted that the pending claim 14 is anticipated by U.S. Patent 5,512,131 (the Kumar '131 patent). In the Kumar '131 patent, a binding moiety (28) is stamped onto a film (32), which "may comprise its own substrate" (col. 14, line 41). A description of possible materials for material 32 is provided in col. 10, lines 40-65, and again on col. 14, lines 56-61, as follows.

"It is to be understood, however, that any electrically conductive, electrically nonconductive, or electrically semiconductive material forming a solid phase at room temperature may be used as material 32 in the present invention, as long as a functional group attachable to or contained within a molecular species, the functional group binding to the material, is available. Although the following list categorizes certain preferred materials with certain preferred functional groups which firmly bind thereto, many of the following functional

groups would be suitable for use with exemplary materials with which they are not categorized, and any and all such combinations are within the scope of the present invention. Preferred materials for use as material 32 include metals such as gold, silver, copper, cadmium, zinc, palladium, platinum, mercury, lead, iron, chromium, manganese, tungsten, and any alloys of the above with sulfur [sic]-containing functional groups such as..."

Therefore, claim 68 which recites "partially or fully reflective substrates including metals, and metal-coated substrates" and incorporation of the remaining substrate/surface materials (i.e., glass, mica, polished, silicon, silicon dioxide, polymeric materials, and substantially transparent polymeric materials) is believed to be allowable.

It should also be noted that Examiner's objection to claim 30 in the Final Office Action is based on an incorrect reading of column 15, line 66, to col. 16, line 1, of the Kumar '131 patent, which is as follows:

As described herein, material 32 may be provided in a very thin film, and may be provided on a transparent substrate such as a glass slide.

Glass in this context is the transparent surface that material **32** is "provided on" (i.e., glass is substrate **34**). There are no descriptions or examples in the '161 patent in which an analyte-specific receptor is patterned directly onto the substrate's surface without the intermediacy of material **32**.

Applicants assert that claim 68 is patentably distinct over the Everhart '256 patent as the cited text relies upon the substrate, on which an analyte-specific receptor is patterned, as being a micro-contact printed metalized film and not one of the substrate materials that are included in claim 68.

New claim 70 is supported in the original application as filed on page 18, lines 14 to 22. Applicants submit no new matter is added by the amendments made herein.

In view of the foregoing, reconsideration and withdrawal of the rejection of claims 14-33, 66 is respectfully solicited and favorable consideration and allowance of claims 14-33 and 66-69 is requested.

Should the Examiner have any questions regarding the allowability of the claims with respect to the art, it would be appreciated if the Examiner would contact the undersigned attorney-of-record at the telephone number shown below for further expediting the prosecution of the application.

Respectfully submitted,

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Date: November 27, 2003

26,2004

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